1880, and (as far as can be gathered from the accounts) only resembles the one of 1843 in the point of extreme brilliancy at perihelion.

Royal Observatory,
Cape of Good Hope:
1882, *Oct.* 9.

The Great Comet (b) 1882. By F. C. Penrose.

I have attempted to work out the orbit of the comet graphically; and although I know I have not succeeded fully, yet I have arrived at results which, I trust, may be thought respectable. They are, at any rate, entirely independent of any published elements.

T	Sept. 17·23,
Longitude of ascending node	$348^\circ\ 20'$,
Inclination	37 15,

the orbit being an ellipse with a period of about 480 days. The above elements were got from observations subsequent to perihelion, and up to Oct. 11. When I try to connect them with later observations, I see reason to come nearer to Mr. Hind's elements, which give for the node and the inclination respectively

$$346^\circ\ 6'\ 58''$$

and

$$37^\circ\ 58'\ 59''.$$

I have not yet made any determination of the orbit before perihelion, but from such observations as have come to hand, and others taken very shortly after perihelion, I think I may venture to add that the graphical work suggests the probability of the node having been swept several degrees backwards in longitude between the contact with the Sun's limb recorded by Mr. Gill on the 17th, and the subsequent observations, say up to Sept. 23.

Observations of Comets a, b, c, 1882, *made at the Royal Observatory, Greenwich.*

(*Communicated by the Astronomer Royal.*)

The observations of Comet *a* with the Naylor equatorial, of Comet *b* with the East equatorial, and of Comet *c* with the South-east equatorial, were all made by taking transits over two cross wires at right angles to each other, and each inclined 45° to the parallel of declination.

Observations of Comet a, 1882, *with the Naylor Equatorial. Aperture* 6 *inches.*

Greenwich Mean Solar Time.	Obs.	$\delta - *$ R.A.	$\delta - *$ N.P.D.	No. of Comp.	Apparent R.A.	Apparent N.P.D.	Star.
1882. d h m		m s	′ ″		h m s	° ′ ″	
Apr. 20 12 42	W.C. & T.	+3 37·40	+ 4 56·8	4	19 15 27·52	32 35 2·7	*a*
		−2 41·69	+ 0 16·2	4	19 15 25·87	32 35 10·3	*b*
28 12 49	T.	+1 1·77	+12 18·9	5	20 7 3·51	24 14 35·5	*c*
12 56		−4 46·67	+ 7 21·6	3	20 7 3·04	24 14 20·1	*d*
30 11 14	T.	+1 18·97	+ 8 33·2	2	20 26 1·34	22 15 5·2	*e*
		−1 20·97	−16 8·4	2			*f*
11 59	H.	−1 15·46	−18 7·1	1			*f*
12 30		+1 53·19	+ 5 27·3	2	20 26 35·56	22 11 59·3	*e*
May 2 10 59	T.	+5 32·94	−23 12·9	2	20 49 24·12	20 17 39·0	*g*
10 55		−2 28·91	−11 43·0	1			*h*
11 8		−3 58·15	−13 22·3	1	20 49 32·35	20 17 6·1	*i*
4 11 39	T.	+2 24·39	+ 8 50·7	2	21 19 23·08	18 28 31·2	*k*
		−1 40·27	+ 1 38·0	2	21 19 21·93	18 28 33·9	*l*

Mean Places of the Comparison Stars.

Star.	Star's Name.	R.A. 1882·0	N.P.D. 1882·0	Authority.
		h m s	° ′ ″	
a	54 Draconis	19 11 48·74	32 29 54·0	Greenwich Catalogue, 1860
b	Groomb. 2827	19 18 6·22	32 34 42·4	Radcliffe, 1845
c	Oeltz. Arg. 20152	20 6 0·58	24 2 6·5	Oeltz. Arg. (N), 1842
d	„ 20313	20 11 48·58	24 6 48·5	„
e	Arg. Z. + 67° − 1248	20 24 41·29	22 6 22·3	Bonn Observations, vol. v.
f	Anonymous			
g	Groomb. 3301	20 43 50·17	20 40 42·9	Radcliffe, 1845
h	Anonymous			
i	Groomb. 3359	20 53 29·57	20 30 19·6	Radcliffe, 1845
k	Oeltz. Arg. (N) 22131	21 16 57·91	18 19 32·4	Oeltz. Arg. (N), 1842
l	„ 22261	21 21 1·45	18 26 47·9	„

April 30 and *May* 4.—Comet very faint.

The observations are not corrected for refraction or parallax.

Observations of Comet a, 1882, S.P. *with the Transit Circle.*

Greenwich Mean Solar Time.				Obs.	R.A.	N.P.D. (corrected for Refraction and Parallax).	Remarks.
1882. d	h	m	s		h m s	° ′ ″	
May 12	8	52	15	H.	0 14 19·68	−15 32 38·46	Exceedingly faint
13	9	13	27	A.D.	0 39 31·76	−15 53 49·23	Very faint
15	9	52	17	T.	1 26 20·62	−17 8 19·55	Very faint indeed
17	10	24	14	L.	2 6 16·08	−18 59 51·63	
19	10	48	58	H.	2 38 58·01	−21 20 56·21	Very faint, cloudy
20	10	58	56	T.	2 52 53·50	−22 40 17·78	Very faint indeed
23	11	20	37	A.D.	3 26 28·27	−27 5 53·64	Much brighter
24	11	25	40	B.	3 35 28·72	−28 42 0·19	Very faint, cloudy
25	11	29	48	H.	3 43 33·70	−30 21 16·78	
27	11	35	52	A.D.	3 57 31·60	−33 48 34·86	About 5th magnitude
28	11	37	58	T.	4 3 34·20	−35 36 30·51	
29	11	39	31	H.	4 9 4·19	−37 27 7·99	Cloudy

Observations of Comet b, 1882, *with the East Equatorial. Aperture* 6·7 *inches.*

Greenwich Mean Solar Time.				Obs.	♂−✶ R.A.	♂−✶ N.P.D.	No. of Comp.	Apparent R.A.	Apparent N.P.D.	Star.
1882. d	h	m			m s	′ ″		h m s	° ′ ″	
Oct. 25	17	13		A.D.	+1 46·75	−12 5·9	2			*a*
	17	17			+1 41·12	− 8 58·3	4	10 5 20·70	107 24 33·7	*b*
	17	22			−0 17·75	+ 0 10·7	2	10 5 17·96	107 25 1·6	*c*
29	17	8		A.D.	+0 34·00	+ 3 25·9	2	9 59 27·15	108 53 57·1	*d*
	17	12			−3 11·66	− 5 21·5	3	9 59 22·06	108 54 1·4	*e*
	17	20			+0 39·50	+ 2 0·6	1	9 59 25·06	108 54 18·3	*f*
30	17	20		H.	+1 12·80	+ 4 16·9	2			*g*
	17	10			+0 26·82	+ 5 47·3	1			*h*
	17	30			−3 53·85	+ 8 22·0	1	9 57 55·41	109 16 31·4	*i*
Nov. 1	15	41		T.	+0 57·50	+12 34·6	3	9 54 45·83	110 0 17·7	*k*
	15	48			−2 21·75	+ 8 59·3	2	9 54 44·10	110 0 22·8	*l*
7	16	45		H.	+1 27·62	− 5 14·1	2			*m*
	16	37			−2 9·50	− 1 37·2	1			*n*
	16	52			+5 11·50	− 6 14·8	1	9 44 36·05	112 6 37·0	*o*
8	17	23		A.P.	−1 58·75	+ 6 45·7	2			*p*
					−3 34·00	− 2 4·7	2			*q*
9	17	32		T.	+1 22·25	− 0 51·8	4	9 40 38·38	112 48 27·9	*r*
					+1 3·50	− 8 17·5	2	9 40 38·40	112 48 23·7	*s*
					+1 39·75	+ 7 53·9	2			*t*
	17	40		A.D.	+1 3·25	− 8 59·7	2	9 36 40·10	113 28 5·5	*u*
	17	48			−0 20·10	+ 4 42·1	5	9 36 38·84	113 28 10·0	*v*
	17	50			+0 46·50	+ 5 37·2	1			*w*
	17	56			−3 1·00	− 0 48·2	2			*x*

Mean Places of the Comparison Stars.

Star.	Star's Name.	R.A. 1882·0. h m s	N.P.D. 1882·0. ° ′ ″	Authority.
a	Anonymous			
b	Lalande 19797	10 3 37·01	107 33 22·4	Lalande
c	Oeltz. Arg. 10428	10 5 33·15	107 24 41·1	Oeltz. Arg. (S), 1850
d	Lalande 19699	9 58 50·47	108 50 21·8	Oeltz. Arg. (S)
e	„ 19770	10 2 31·05	108 59 13·4	„
f	„ 19696	9 58 42·88	108 52 8·3	„
g	Anonymous			
h	„			
i	Lalande 19765	10 1 46·56	109 7 59·9	Oeltz. Arg. (S)
k	„ 19559	9 53 45·55	109 47 33·9	Lalande
l	„ 19641	9 57 3·09	109 51 14·2	„
m	Anonymous			
n	„			
o	Oeltz. Arg. 10075	9 39 11·56	112 12 43·1	Oeltz. Arg. (S)
p	Anonymous			
q	„			
r	Oeltz. Arg. 10084	9 39 31·86	112 56 32·5	Oeltz. Arg. (S)
s	„ 10076	9 39 13·09	112 49 10·9	„
t	Anonymous			
u	Oeltz. Arg. 10011	9 35 33·74	113 36 56·5	Oeltz. Arg. (S)
v	„ 10043	9 36 55·83	113 23 19·1	„
w	Anonymous			
x	„			

Nov. 1.—Comet very faint, cloudy.
Nov. 8.—Comet very faint at times.
Nov. 9.—Nucleus of comet very diffused and faint.
Nov. 11.—The comet appeared a faint patch of light; very difficult to observe; sky thick.
The observations are not corrected for refraction or parallax.

Observation of Comet b, 1882, *with the Altazimuth.*

From a double observation of Comet *b* made on the morning of Oct. 23 with the altazimuth, with the graduated face of the vertical circle right and left, the following position corrected for refraction and parallax was obtained:—

Greenwich Mean Solar Time.	Observer.	R.A.	N.P.D.
1882. d h m s		h m s	° ′ ″
Oct. 22 16 49 17	H.	10 9 30·98	106 15 28·6

Observations of Comet b, 1882, *with the Transit Circle.*

Greenwich Mean Solar Time.	Obs.	R.A.	N.P.D. (corrected for Refraction and Parallax).	
1882. d h m s		h m s	° ′ ″	
Nov. 16 17 41 26	L.	9 26 10·00	115 3 34·0	Cloudy
17 17 35 11	A.D.	9 23 50·53	115 21 39·9	Very faint; a difficult observation

Observations of Comet c, 1882, *with the S.E. Equatorial. Aperture* 12·8 *inches.*

Greenwich Mean Solar Time.	Obs.	δ − ✶ R.A.	δ − ✶ N.P.D.	No. of Comp.	Apparent R.A.	Apparent N.P.D.	Star.
1882. d h m		m s	′ ″		h m s	° ′ ″	
Sept. 27 16 28	M	+2 9·80	+2 49·2	1	7 46 47·90	86 28 20·2	*a*
		+0 49·85	+3 7·2	1	7 46 47·78	86 28 17·6	*b*
27 15·58	M	+0 16·01	−0 28·5	13	7 46 44·24	86 26 58·3	*c*
		+0 12·05	+8 5·2	13	7 46 45·34	86 26 55·7	*d*

Mean Places of the Comparison Stars.

Star.	Star's Name.	R.A. 1882·0.	N.P.D. 1882·0.	Authority.
		h m s	° ′ ″	
a	W.B. VII.–1289	7 44 35·37	86 25 24·6	Weisse's Bessel (1)
b	,, 1324	7 45 55·20	86 25 3·9	,,
c	,, 1337	7 46 25·51	86 27 20·2	,,
d	,, 1339	7 46 30·57	86 18 43·9	,,

The observations are not corrected for refraction or parallax.

The initials W.C., A. D., M., T., L., H., A. P., and B., are those of Mr. Christie, Mr. Downing, Mr. Maunder, Mr. Thackeray, Mr. Lewis, Mr. Hollis, Mr. A. Pead, and Mr. Bennett.

Royal Observatory, Greenwich:
1882, *Nov.* 18.

Observations of the Great Comet (b), 1882, *made at the Melbourne Observatory.* By R. L. J. Ellery, F.R.S.

A brilliant comet, first seen in Australia on the morning of Sept. 9, has since been observed here on every occasion when the very cloudy weather which has prevailed would permit.

It became so bright just before perihelion that it was seen at noon with the naked eye within four degrees of the Sun on the 17th, and was observed on the meridian with the transit circle on three days. It is now (Sept. 25) again visible in the early morning. On the 24th it was easily seen with a $4\frac{1}{2}$-in. telescope three hours after sunrise. Its tail was seen 15° long in the bright dawn, and was about 1° wide at the end. This morning, although markedly less bright, it was seen in the same telescope 20 minutes after sunrise.